Exhibit 300: Capital Asset Summary

Part I: Summary Information And Justification (All Capital Assets)

Section A: Overview & Summary Information

Date Investment First Submitted: 2010-03-12
Date of Last Change to Activities: 2012-08-16
Investment Auto Submission Date: 2012-02-28
Date of Last Investment Detail Update: 2012-06-29
Date of Last Exhibit 300A Update: 2012-06-29
Date of Last Revision: 2012-08-16

Agency: 006 - Department of Commerce **Bureau:** 48 - National Oceanic and Atmospheric Administration

Investment Part Code: 01

Investment Category: 00 - Agency Investments

1. Name of this Investment: NOAA/NWS/ Next Generation Air Transportation System (NextGen)

2. Unique Investment Identifier (UII): 006-000312500

Section B: Investment Detail

1. **Provide a brief summary of the investment, including a brief description of the related benefit to the mission delivery and management support areas, and the primary beneficiary(ies) of the investment. Include an explanation of any dependencies between this investment and other investments.**

This investment represents NOAA's commitment to the multi agency Next Generation Air Transportation System (NextGen) initiative, and will result in the development and deployment of the NextGen 4-Dimensional (4-D) Weather Data Cube described in the NextGen Integrated Work Plan. This Cube is characterized by: a) Improvements to IT infrastructure comparable to those already employed by other governmental agencies and by industry to provide greater and easier access to NOAA weather information for aviation decision-makers. Greater access to aviation relevant weather information will facilitate better integration of this information into aviation user s decision-making processes. b) More consistent aviation weather information, providing a common operational weather picture needed for colaborative decision making across the National Airspace System. c) Improvements to accuracy of weather information. The research and development (R&D) needed to meet NextGen's stringent weather forecast accuracy requirements will be an extended, multi-year effort. This long lead-time R&D will underpin more accurate aviation weather information including improved prediction of local weather (such as thunderstorms), improved forecast confidence (reduction of uncertainty), and reduction of false alarm rate. This improved guidance forms the foundation to which forecasters add their expertise to develop the official forecast supporting NextGen goals. d) Improvements to aviation forecast generation techniques. NWS meteorologists require advanced tools and techniques to

enable faster, more accurate generation of aviation weather information. While this investment is intended to benefit the aviation community, improvements to IT infrastructure, improved forecast accuracy, and more advanced forecast processes will have wider reaching benefits across NOAA and to governmental and private sectors that use environmental information. These results will be leveraged by other NWS service areas, such as support to Emergency Managers, and improved forecasts for severe weather notification or flood warnings to the public. NOAA, other governmental agencies, private industry, and the public will have more effective and efficient access to accurate, consistent, and timely weather information to drive their decision-making systems and processes.

2. **How does this investment close in part or in whole any identified performance gap in support of the mission delivery and management support areas? Include an assessment of the program impact if this investment isn't fully funded.**

The multi-agency NextGen Joint Planning and Development Office (JPDO) has developed a plan to accommodate the expected growth in demand, which will allow for the reduction of air traffic delays. A critical component of the NextGen plan is the integration of weather information into air traffic operations. To enable this integration, the plan requires the creation of rapidly updated, high-resolution probabilistic weather information consistent across space and time and accessible to all NAS managers and users through a network-enabled infrastructure. Meteorologists will utilize and produce this information, using enhanced forecast processes to add value to forecast guidance and rapidly updated gridded datasets produced by automation. This capability does not presently exist within the federal government, and the JPDO partner agencies are depending on NOAA, as the federal experts in the provision of weather information, to deliver it. Failure to fund this initiative will halt the NWS's ability to support the legislatively-mandated, multi-agency NextGen initiative to improve the efficiency and effectiveness of the Nation's airspace system. DOC will not be able to carry out its responsibility to develop and deploy a NextGen 4-D Weather Data Cube for aviation users by 2014, and continued system and model improvements will not be achieved after 2014, as required by the NextGen Integrated Work Plan. The FY2011 budget dispute and continued uncertainty in the long term budget profile have already delayed the implementation of this capability by over 1 year. Elimination of the program will necessitate the continuation of current ad hoc, inefficient use of stove-piped weather capabilities within NOAA and the FAA, thereby negating the ability for air traffic managers to make sound, informed decisions based on common and consistent information on weather impacting aircraft routes and airports. Elimination of the program will also stall improvements to higher-resolution modeling needed to more precisely predict the leading edge of thunderstorms affecting air routes, downbursts that affect aircraft take-off and landing, and hail and intense rain that affect all phases of flight operations, thereby inhibiting any reduction to air traffic delays and preventing the reuse of these capabilities by other NWS service areas.

3. **Provide a list of this investment's accomplishments in the prior year (PY), including projects or useful components/project segments completed, new functionality added, or operational efficiency achieved.**

- Conducted end-to-end proof of concept with Federal Aviation Administration (FAA) to validate conceptual design - Coordinated with NOAA/NWS program ensuring NWS Enterprise alignment. - System functional and performance requirements finalized in preparation for acquisition - 4-D Cube Draft RFP was released focusing on ""Cloud"" solution

in a dedicated service-centric vehicle to meet NWS Executive guidance.

4. **Provide a list of planned accomplishments for current year (CY) and budget year (BY).**

Planned FY12 activities include: 1 NextGen 4-D Weather Data Cube Services and Infrastructure development: Software and systems prototyped in prior years will be made ready to transition from the research environment to operations. This activity will begin in FY 2012 to ensure readiness to complete Operational Testing and Evaluation and deployment of this Initial Operational Capability (IOC) as scheduled in FY 2014. 2. Integration of diverse forecasts into a consistent weather picture: Develop techniques and processes to evaluate disparate forecasts of individual weather parameters and examine methods to consolidate these forecasts into a Single Authoritative Source (SAS) of weather aviation information. 3. Tools and techniques for the generation of legacy aviation products from digital sources: Legacy aviation forecast products are largely text based and have been generated in essentially the same manner for the past 50 years. Tools and techniques must be developed to allow these products to be derived from digital weather information generated at NWS facilities. This capability is an essential element in the reduction of inconsistencies currently found in aviation products. 4. Expanded R&D capabilities to meet NextGen MOC requirements: Initiate research and development (R&D) in advanced weather observation and prediction to meet critical NextGen MOC requirements. The focus of FY 2012 activities will be on advanced numerical weather prediction models, enhanced forecast processes and the development of tools enabling forecasters to add value to automatically generated weather information sets. The FY13 DOC Budget contains no funding for NextGen activities, therefore none are planned.

5. **Provide the date of the Charter establishing the required Integrated Program Team (IPT) for this investment. An IPT must always include, but is not limited to: a qualified fully-dedicated IT program manager, a contract specialist, an information technology specialist, a security specialist and a business process owner before OMB will approve this program investment budget. IT Program Manager, Business Process Owner and Contract Specialist must be Government Employees.**

2009-06-15

Section C: Summary of Funding (Budget Authority for Capital Assets)

1.

Table I.C.1 Summary of Funding

	PY-1 & Prior	PY 2011	CY 2012	BY 2013
Planning Costs:	$4.6	$5.0	$2.4	$2.0
DME (Excluding Planning) Costs:	$1.0	$0.7	$12.8	$13.0
DME (Including Planning) Govt. FTEs:	$0.6	$0.6	$1.1	$1.3
Sub-Total DME (Including Govt. FTE):	$6.2	$6.3	$16.3	$16.3
O & M Costs:	$0.0	$0.0	$0.0	$0.0
O & M Govt. FTEs:	$0.0	$0.0	$0.0	$0.0
Sub-Total O & M Costs (Including Govt. FTE):	0	0	0	0
Total Cost (Including Govt. FTE):	$6.2	$6.3	$16.3	$16.3
Total Govt. FTE costs:	$0.6	$0.6	$1.1	$1.3
# of FTE rep by costs:	4	4	9	10
Total change from prior year final President's Budget ($)		$-18.0	$-17.1	
Total change from prior year final President's Budget (%)		-74.10%	-51.20%	

2. If the funding levels have changed from the FY 2012 President's Budget request for PY or CY, briefly explain those changes:

The FY13 APpropriation reduced NextGen funding from a requested $33.340M to $16.285M. The program schedule has been adjusted to acount for this reduced funding level.

Section D: Acquisition/Contract Strategy (All Capital Assets)

Table I.D.1 Contracts and Acquisition Strategy

Contract Type	EVM Required	Contracting Agency ID	Procurement Instrument Identifier (PIID)	Indefinite Delivery Vehicle (IDV) Reference ID	IDV Agency ID	Solicitation ID	Ultimate Contract Value ($M)	Type	PBSA ?	Effective Date	Actual or Expected End Date
Awarded	1330	DOCDG133W07CQ0066T0001	DOCDG133W07CQ0066	1330							
Awarded	1330	DOCDG133W07CQ0066T0004	DOCDG133W10CQ0066	1330							
Awarded	1330	DOCDG133W09NC0492	GS23F0286P	4730							
Awarded	1330	DOCDG133W10CQ0026T0013	DOCDG133W10CQ0026	1330							
Awarded	1330	DOCDG133W10SE3487									

2. If earned value is not required or will not be a contract requirement for any of the contracts or task orders above, explain why:
All appropriate contracts will include EVM provisions, and vendors will be required to provide EVM data. Many of the anticipated contracts will be for project management services and basic research and will be "level of effort" type contracts, where EVM is not practical.

Exhibit 300B: Performance Measurement Report

Section A: General Information

Date of Last Change to Activities: 2012-08-16

Section B: Project Execution Data

Table II.B.1 Projects

Project ID	Project Name	Project Description	Project Start Date	Project Completion Date	Project Lifecycle Cost ($M)
3125P1012	Business Process Requirements	Activities and costs required to manage and support the program including Program Management Staff, Office expenses, rent, common services and other overhead. Meet requirements levied on the program by Line office, agency and department CFO, CAO and CIO business processes.			
3125D10101	IT Services	Development and implementation of Web Services for network enabled discovery, translation and dissemination of aviation relevant weather information.			
3125D10103	Forecaster Applications	Development of software applications for use by NWS meteorologists in the production of digital forecasts, especially for aviation users.			
3125D10104	Verification Services	Development of meteorological verification systems and services to measure performance of aviation relevant forecast products.			

Table II.B.1 Projects

Project ID	Project Name	Project Description	Project Start Date	Project Completion Date	Project Lifecycle Cost ($M)
3125D10105	Models and Guidance	Enhancement and implementation of numerical weather prediction models and related data assimilation and post processing services.			

Activity Summary

Roll-up of Information Provided in Lowest Level Child Activities

Project ID	Name	Total Cost of Project Activities ($M)	End Point Schedule Variance (in days)	End Point Schedule Variance (%)	Cost Variance ($M)	Cost Variance (%)	Total Planned Cost ($M)	Count of Activities
3125P1012	Business Process Requirements							
3125D10101	IT Services							
3125D10103	Forecaster Applications							
3125D10104	Verification Services							
3125D10105	Models and Guidance							

Key Deliverables

Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)
3125D10101	Final FY11 Capability Evaluation	Complete FY11 proof of concept demonstration and evaluation of 4-D Weather Data Cube test systems.	2011-09-30	2011-09-30	2011-10-28	121	-28	-23.14%
3125D10105	LAMP C and V Grids Operational	Transition experimental Ceiling and Visibility grids to operations in National Digital Guidance Database.	2011-09-30	2011-09-30	2011-09-30	60	0	0.00%
3125D10103	Aviation Information	Assessment of	2011-10-31	2011-10-31	2011-10-31	152	0	0.00%

Key Deliverables								
Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)
	Variable (AIV) Assessment	Aviation Impact Variable (AIV) state of the science.						
3125D10101	Prepare Draft Acquisition Documentation	Draft SOW and consolidate requirements for RFP for 4-D Cube development.	2011-12-02	2011-12-02	2012-03-30	102	-119	-116.67%
3125D10104	RTMA Upgrade Package Development	Implementation of upgrade package for Real Time Mesoscale Analysis to include aviation parameters.	2011-12-30	2011-12-30	2012-03-30	183	-91	-49.73%
3125D10103	Implement ANC system at Chicago WFO	The AutoNowcaster system will be implemented at Chicago WFO in conjunction with the Golden Triangle initiative.	2012-01-13	2012-01-13	2012-01-15	165	-2	-1.21%
3125D10103	Develop Area Forecast Text Formatters for IC4D grids	MDL and the AWT will develop Area Forecast text formatters using IC4D generated grids as input.	2012-01-31	2012-01-31	2012-01-31	183	0	0.00%
3125D10103	MITL Integrated with COSPA	Examine feasibility of MITL in CoSPA.	2012-02-28	2012-02-28	2012-02-28	175	0	0.00%
3125D10105	NGAFS Phase I Verification	Complete verification of PHASE I output of NGAFS.	2012-02-28	2012-02-28	2012-02-28	181	0	0.00%
3125D10105	LAMP Convective Grids Experimental	Deploy experimental Convective forecast grids from LAMP into the National Digital Guidance Database.	2012-03-30	2012-03-30	2012-03-30	179	0	0.00%
3125P1012	Program Support FY12 1st Half	Program Office contract support first half of FY12.	2012-03-30	2012-03-30	2012-03-30	179	0	0.00%
3125P1012	Program Overhead	Program Office	2012-03-30	2012-03-30	2012-03-30	179	0	0.00%

Key Deliverables								
Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)
	FY12 1st Half	overhead first half FY12.						
3125D10104	Delayed Mesoscale Analysis Prototype Development	Begin development and work towards implementation of the Delayed Mesoscale Analysis (DMA) for the CONUS.	2012-03-30	2012-03-30	2012-03-30	179	0	0.00%
3125D10101	2012 IT Capability Evaluation Planning	Conduct planning and prototyping activities in preparation for FY12 IT Capability Evaluations.	2012-03-30	2012-03-30	2012-03-30	179	0	0.00%
3125D10104	Initial OCONUS DMA Development	Begin development of the DMA for the OCONUS.	2012-05-31	2012-05-31		59	-92	-155.93%
3125D10103	Evaluate functionality of ANC system at Chicago WFO	Usability and functionality over the larger Golden Triangle domain will be evaluated for fit into NWS operations.	2012-06-29	2012-06-29		179	-63	-35.20%
3125D10103	Develop SIGMET and AIRMET text formatters for AAWU	MDL, the AAWU and AWT will develop AIRMET and SIGMET formatters using IC4D generated grids as input, and prototype methods and procedures for same.	2012-07-31	2012-07-31		181	-31	-17.13%
3125D10105	NGAFS Phase II Development	Develop Phase II of the NGAFS model.	2012-08-31	2012-08-31		183	0	0.00%
3125D10105	LAMP Development FY12 2nd Half	Refinement of LAMP capabilities to align with Digital Aviation Services requirements for statistical guidance.	2012-09-28	2012-09-28		179	0	0.00%
3125P1012	Program Support FY12 2nd Half	Program Office contract support	2012-09-28	2012-09-28		179	0	0.00%

Key Deliverables								
Project Name	Activity Name	Description	Planned Completion Date	Projected Completion Date	Actual Completion Date	Duration (in days)	Schedule Variance (in days)	Schedule Variance (%)
		second half of FY12.						
3125P1012	Program Overhead FY12 2nd Half	Program Office overhead second half FY12.	2012-09-28	2012-09-28		179	0	0.00%
3125D10103	Closeout ANC Project	Finish AutoNowcaster preject activities and put project in hibernation until funding is available.	2012-09-28	2012-09-28		88	0	0.00%
3125D10101	Normalize and refine requirements	Ensure all 4-D Cube requirements are captured at the same level of detail and capture all aspects of the project.	2012-09-28	2012-09-28		179	0	0.00%
3125D10101	Security Coordination and Licenses FY12	Conduct IT security planning activities, coordination with partner agencies and COTS licenses for FY12.	2012-09-28	2012-09-28		88	0	0.00%

Section C: Operational Data

Table II.C.1 Performance Metrics

Metric Description	Unit of Measure	FEA Performance Measurement Category Mapping	Measurement Condition	Baseline	Target for PY	Actual for PY	Target for CY	Reporting Frequency
NONE								